

# The NORTH QUEENSLAND NATURALIST CAIRNS

Journal of

NORTH QUEENSLAND NATURALISTS CLUB  
Box 991, P.O. CAIRNS, Q. 4870. Australia.  
Phone 53 1183

*Founder President: The late Dr. HUGO FLECKER*  
*International Library No: AT ISSN 0078 1630*

OBJECTS: The furtherance of the study of the various branches of Natural History and the preservation of our heritage of Indigenous fauna and flora.

MEETINGS: Second Tuesday of each month at Cairns Education Centre, Cnr. Morehead and Lazarus Sts., Bungalow, 8.00 p.m.

FIELDS DAYS: Sunday before meeting. Notice of place and time given in "Cairns Post".

SUBSCRIPTIONS: (Due September 30th)  
City and Suburban Members  
Country Members  
Pensioner and Junior Members

- \$8.00  
- \$5.00  
- \$10.00 - Family Rate

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56th Year

August 1989

No. 189

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Mangrove Boardwalk April 9th

S. J. Kimmins

On Sunday, April 9th, the club visited natural attractions within and close to the city boundaries. Firstly, the Jack Barnes Mangrove Boardwalk near the airport. This was an enjoyable easy walk in the shade of the mangrove forest. Surprisingly few mosquitoes were encountered. Many species of mangroves were noted; some with buttress root, some with stilt roots and others knee roots.

Pistol prawns made more noise than the birds with their loud clicks while colourful fiddler crabs and grapsid crabs quietly went about their business in the mud.

A few dendrobiums, *D. discolour* and *D. teritifolium*, were seen in the trees. Sadly, on trees close to the boardwalk were seen orchid roots where plants had apparently been torn off.

Brown, dusky and varied honeyeaters sang in the trees. Waterbirds were seen on the saltmarsh and a brahmyn kite soared overhead.

From here, the members went to the Bayview Heights Environmental Walk, where steps have been cut into the hill-side, shaded by rain-forest trees. *Licuala murrayia* and *Ptychosperma elegans* were two lovely palms seen. A long-tailed kingfisher was heard: pale yellow robins, fairy warblers, flycatchers and other birds were seen. Beside the track, an immature *Nephila maculata* stretched its thin black legs across its huge web. At the crest, good views of Cairns and Bayview were had through wisps of light rain.

After lunch at the Centenary Lakes, most members walked across the park and up the Red Arrow Walk. More birds were seen, making a total for the day of 40 species. At the Lakes, a strange sighting was of an Indian Mynah with white wings and a light brown colouring.

ooOoo

Yungaburra Notes Late 1988

Ben Constable

The falling waters of Tinaroo Dam in recent months has adversely affected the bird numbers around the lakes perimeter. By the end of November the creeks that feed into Tinaburra waters were reduced to a trickle so these once deep arms of the lake offered little food or protection for its wildlife. Not only were the birds affected, but tortoise and platypus were compelled to move to deeper water while the large mussels that abound died in hundreds as they were left stranded.

Large egrets still searched the shallow pools for prey, and these normally solitary birds were often to be found in loose groups of up to twelve in company with similar numbers of white ibis and royal spoon-bills, along with a scattering of little egrets. The majority of cattle egret, that at times number as much as 100 when feeding with the large local dairy herd, appeared in breeding plumage in early October but remained in the area for a month before dispersing to their nesting sites.

Migratory waders are also not as numerous this year, the first sharp tailed sandpiper was seen on 5/9/88 but no more than 9 have been seen at any one time since. Common sandpipers are even rarer although I did once see four enjoying the rays of the rising sun from the top of an 8 meter high bank. Two green-shanks were seen regularly, but usually in flight, they being more wary than in previous years. A grey tailed tattler stayed in the locality for over a week in mid October, and I was fortunate to be able to admire

its dove grey plumage from the vantage point of a bank a mere 2 meters above where it fed in the silt. Black fronted dotterels in pairs or small groups (some immature) were regularly seen, while Japanese snipe were occasionally flushed from the close cropped grass.

The kites, harriers and little eagles and more rarely white breasted and wedge-tailed eagles that normally patrol this arm of the lake, have, with the flocks of water birds for months been absent, but a grey falcon was seen most days during a two week period in September perched on the power lines on the Gillies-Atherton Road. Its erect stance when watching for prey was similar to that of the brown falcon, but would stoop steeply on its selected victim unlike the others gliding attack.

During August a number of bustards were seen on the Tableland, singly and in pairs, and once a threesome feeding on the corn stubble. A scattered flock of Australian pratincoles frequented a freshly ploughed paddock for several days, and I counted seven but there could possibly have been more as their colouring blended so well with the soil.

Sadly we seem to have lost the white winged triller that for the last four years has cheered us with its song. It arrived as usual in early November, but after singing in a desultory manner for a couple of days from its favourite trees it fell silent, and has not been heard or seen since.

ooOoo

Kauri Creek, Tinaroo April 29th S. J. Kimmins

Week-end camp at Kauri Creek on the shores of Lake Tinaroo April 29th-May 1st saw a total of 60 bird species recorded including wampoo and brown pigeons, the pretty little eastern spinebill, the croaky voiced, elusive Victoria riflebird, pale yellow robin and fantails. Two king parrots calmly sat in a tall wild tobacco bush while people admired them, but they left to join the clan when a flock flew over.

At the camp site, currawongs entertained with their musical calls. An injured boobook owl was found under a tree. Along the tracks introduced lantana was in flower and 10 species of butterflies in plentiful numbers were seen.

Ferns were abundant along the edge of rainforest tracks. Several species of Cyathea treeferns, the quant coral fern *Lycopodium cernum*, Aspleniums and many other species were seen.

The erect seed pods of Cardwellia trees stood out against the sky. A few specimens of the unusual tree, *Placospermum coreaceum* were seen.

ooOoo

#### Friends of the Botanic Gardens

A 'Friends of the Botanic Gardens' organization is to be formed to stimulate interest and community awareness in the Flecker Botanic Gardens which are named after the founder of the N.Q. Naturalists Club and located within the City of Cairns. Part of the "Friends" role will be to provide services such as guided tours, office duties, working bees, botanic surveys and data recording.

ooOoo

ECHOLOCATION IN NORTH QUEENSLAND BATS

M. B. Fenton

Extracted from "Tower Karst" by permission

To echolocate an animal must, among other things, produce appropriate vocalizations for it uses echoes of these sounds to detect objects in its path. Some animals use echolocation to gain access to dark roost or nest sites, while others also employ it to detect potential food. The swiftlets of the caves around Chillagoe about 150 Km from Cairns are examples of the first situation, and insectivorous bats of the area are examples of the second.

Echolocation is an excellent means of negotiating one's way in total darkness, but it suffers from a number of shortcomings, a notable one being the amount of information the echolocator divulges about itself as it moves around. Some caves at Chillagoe are frequented by swiftlets and bats and as the swiftlets emerge their clicking sounds are quite evident to the human ear whereas the bat calls are way beyond human hearing as the bats 'silently' fly by yet the actual loudness of the bat calls is much greater. To other potential listeners the relative loudness of these two types of calls may be quite different.

However, equipped with a bat detector (a microphone sensitive to high frequency sounds), an observer at a cave entrance can easily detect the comings and goings of the bats whether or not they can be seen. Other things listen to bats. Many insects which are hunted by bats, notably moths and lace-wings have ears sensitive to high frequency sounds and use them to detect hunting bats. They can also make noises to confuse the bat and so enhance their chances of survival. Experiments have shown that moths with the facility to hear and confuse bats have a 40% less chance of being captured than deaf moths.

Some bats use very intense calls when echolocating while others produce much softer vocalisations (120DBA to 60DBA). The relative loudness affects the distance over which the bat calls can be detected. For example at Chillagoe most species are easily detectable at 10 meters. The calls of *Macroderma gigas*, the ghost bat, however, are only detectable at a range of 0.5 meters. These are the extremes of bat echolocation call intensity: other species of bats produce calls of intermediate intensity. In general most moths would find bat calls of different intensity as conspicuous as they are to the human observer with a bat detector.

It is a mistake to think that bat echolocation is entirely based on ultrasonics. The northern species *Taphozous georgianus* includes components in its call that can be clearly heard by humans with normal hearing.

Against this background about echolocation, the purpose of the work around Chillagoe was to study patterns of habitat use by local bats by monitoring their echolocation calls. The research involved several steps. First it was necessary to associate calls with specific species, and then to monitor calls in different locations to find out which bats were active where and when. Because echolocating bats produce diagnostic calls and change the patterns of the calls in the course of an attack on an insect, it is possible to ascertain who feeds and where. In turn, these observations permit the detailed hunting strategies used by different insectivorous species.

## MATERIALS AND METHODS

Two kinds of bat detectors were used to collect the information required. The first was a QMC Instruments Mini Bat Detector, a battery powered hand held device which is tuneable from 10kHz to 180kHz. This instrument converts bat (or other ultrasonic) calls to signals that are audible to humans whilst maintaining much of the structure of the calls. This device is available for about \$200. The second device includes a broad band microphone whose output is presented as a sound picture on an oscilloscope through analysis by a zero crossing period meter.

## RESULTS

### Recognizing Bats by their Calls.

The sound pictures or sonograms of the echolocation calls of Chillagoe bats searching for insect prey are shown in figure 1. The bats producing most of the calls have been definitely identified by light-tagged individuals, but three species are only tentatively identified as they were not captured. It is relatively easy to identify these bats with a QMC Mini Detector, since in some cases different species are detectable at quite different frequencies. Tuning the detector to the portion of the call that is constant in frequency produces a chirp-like sound from its speaker. Tuning to the same call at the portion where the frequency varies produces a tick-like sound from the speaker. By tuning to different frequencies and noting the chirps and ticks the observer with practice can identify most of the bats around Chillagoe.

One feature of bat echolocation calls which will be immediately apparent to an observer is the change in rate of pulse production as a bat closes in on its prey. Pulses of chirp-like sounds at a rate of about 10 per second change to tick-like sounds at a rate of 500 per second. The high rate of pulse production is known as a feeding buzz and is usually associated with an attack on an insect. Noting differences in pulse production will help to distinguish one species from another. Some bats produce pulses that make "put put put" sounds from the QMC Detector with relatively long spaces between them, whilst other species produce faster rates of pulses that give "tic tic tic" sounds from the QMC Detector.

### Hunting Patterns of Insectivorous Bats.

In the survey it was evident that the hunting strategies used by various species differed, one clue to the differences being the detectability of the echolocation calls. For example, although calls of *Nyctophilus bifax* (Northern long eared bat), *Rhinolophus megaphyllus* (Eastern horseshoe bat) and *Hipposideros diadema* (Diadem horseshoe bat) were often detected, rarely were more than 20 calls at a time detected. In contrast, the other species *Eptesicus pumilus* (Little brown bat), *Chalinolobus nigrogriseus* (Hoary bat), *Taphazous georgianus* (Common sheath tailed bat) were conspicuous, producing many calls as they hunted.

Observation of light-tagged bats made it clear that *N. bifax* and *R. megaphyllus* hunted from roosts, making brief flights to capture passing targets.

Very soon after arrival in Chillagoe some time was spent watching bats feeding around the spotlights at the National Parks workshop. This facility allowed observation of many attempts by bats to catch insects, some of which dived or looped the loop to avoid capture. The bats used two obvious hunting strategies as indicated by their calls. Some species always reacted to insect targets at short range (about 1 meter), and in one pass through the cloud of insects around the light made many attacks. The others seemed to line up their intended victims from greater range (5 to 10 meters) and on one pass through the food patch would make only one attack.

When bats were subsequently captured it was evident that some species consistently worked at short range, while others consistently worked at long range. Here presented is a tentative classification of the feeding strategies of Chillagoe bats in table 1.

Bats were not uniformly active in all of the habitats which were sampled, and some species were more active in some habitats than in others. In general, bats whose calls were detected in any habitat were feeding there, although some species flying around towers seemed to be en route to or from roosts. However, sampling bats by eavesdropping on their echolocation calls has some inherent biases. For example, whilst making observations from within a thicket bats were feeding from within the thicket and above and it was necessary to watch the bats to see where they were or one might conclude that all the calls came from within the thicket.

The echolocation calls of insectivorous bats provide a window on their patterns of activity and behaviour. By listening to and watching these bats, it is possible to study their hunting habits. In many instances one locates bats in areas where they had not previously been encountered when one listens to echolocation calls and does not rely on catching bats in mist nets or traps. A prime example of this is provided by the two species of molossids around Chillagoe. Bat detectors, sometimes your ears, can put you into the world of bats.

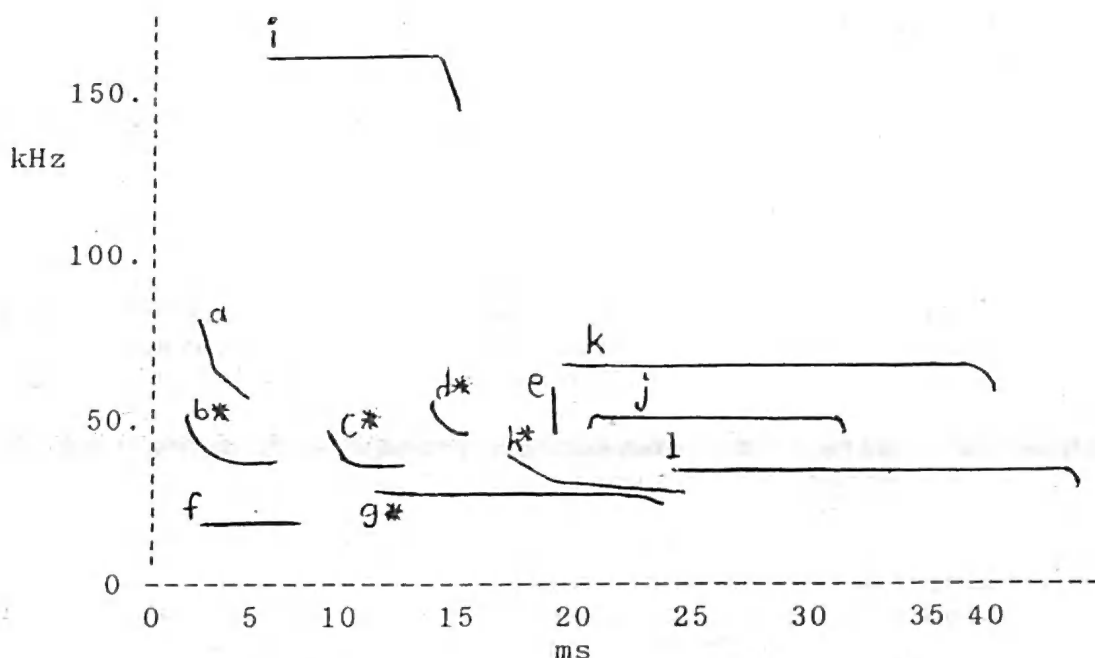


Figure 1.

In figure 1 typical search phase echolocation calls of microchiropteran bats encountered in the vicinity of Chillagoe are shown as they would appear on a period meter-oscilloscope display. With the exception of calls a,i & l, the calls shown here are illustrated from tracing of sonographs produced from recordings of free-flying bats in the field.

- |                                  |                                    |
|----------------------------------|------------------------------------|
| a <i>Miniopterus australis</i> + | b <i>Chalinolobus nigrogriseus</i> |
| c <i>Nycticeius balstoni</i>     | d <i>Eptesicus pumilus</i>         |
| e <i>Nyctophilus bifax</i>       | f <i>Taphozous georgianus</i>      |
| g <i>Tadarida jobensis</i> +     | h <i>Tadarida beccarrii</i> +      |
| i <i>Hipposideros ater</i>       | j <i>Hipposideros diadema</i>      |
| k <i>Rhinolophus megaphyllus</i> | l <i>R. philippinensis</i>         |

The \* indicates species readily detectable on the QMC Mini Bat Detector at 10 meters. + Tentative but not confirmed.

Table 1  
A tentative classification of some Chillagoe insectivorous bats by feeding strategy with comments on their echolocation calls

BAT	FEEDING AND ECHOLOCATION
<i>Taphozous georgianus</i>	flies high and fast chasing flying prey, reacting to targets at ranges of at least 10 meters; echolocation sounds: beeping from QMC tuned to around 17kHz; calls audible to many people.
<i>Rhinolophus megaphyllus</i>	waits at perches close to ground (2 meters) and makes short flights to intercept targets; echolocation calls: beeping sounds from QMC tuned to around 70 kHz.
<i>Hipposideros diadema</i>	waits at perches high off the ground and makes short flights to intercept targets; echolocation calls: beeping sounds from QMC tuned to around 55 kHz.
<i>Nyctophilus bifax</i>	appears to wait at perches quite high of the ground and makes short flights to intercept targets; echolocation calls: ticking sounds from QMC tuned from just over 40 to 60 kHz.
<i>Eptesicus primulus</i>	flies continuously in pursuit of flying prey, usually feeds close to the ground or canopy; reacts to targets at short range (2 meters); echolocation calls: ticks at about 50 kHz (occasionally with slight tonal quality); high pulse rate when hunting.
<i>Chalinolobus nigrogriseus</i>	flies continuously in pursuit of flying prey, usually feeds close to ground or over canopy; reacts to targets at longer range (3 to 5 meters); echolocation calls: tonal sounds from QMC tuned around 35 kHz; slower pulse repetition rate.

*Tadarida jobensis* flies continuously in pursuit of flying prey, usually high above the ground; reacts to prey at longer distances (up to 10 meters); echolocation calls: tonal sounds from QMC tuned to around 20 kHz; lower components audible to humans.

*Tadarida beccarrii* flies continuously in pursuit of flying prey, usually high above the ground; reacts to prey at longer distances (up to 10 meters); echolocation sounds: tonal from QMC tuned to around 30 kHz.

ooOoo

Evelyn Tableland May 20-21st

S. J. Kimmins

A large party of N.Q. Naturalists had a dirty weekend on the misty heights of the Evelyn Tableland on May 20-21. Thanks to the kindness of Mr and Mrs Allan Williamson, members camped on their property on the bank of a creek screened by trees and ferns. It wasn't the Williamson's fault that it rained!

Despite the mud and moisture, members thoroughly enjoyed exploring this new venue. A flock of silvereyes with red-browed finches flitted around the campsite, followed by warblers and other small birds. One of the party saw a beautiful golden whistler; others saw the eastern spinebill. A wedgetail eagle soared overhead, king parrots and a flock of topknot pigeons were also seen. Allan Williamson took his visitors to see an uncommon small frog, *Stenothryne robusta*, which only lives in rainforest in elevated situations. Spotlighting at night in the near-by forest revealed 2 species of possums. Early risers were privileged to see a platypus in the creek.

The botanically minded noticed a king fern *Angiopteris evecta* growing on the creek's edge, and the small moisture-loving tree, *Rhodomyrtus trineuris*. The mass of tree ferns in the gullies of the area was very impressive.

ooOoo

Some Observations on Behaviour of Sunbirds Gus Harvey

A couple of months ago 2 Sunbirds built a nest outside our kitchen window. One chick hatched and feeding of the chick was observed and photographed. This chick vacated the nest in due course and the nest was left vacant for 2 or 3 weeks. About 2 weeks ago I discovered 2 eggs in the nest and the female bird is now sitting. The male bird has not been sighted.

At lunchtime on 2 different days this week a young female bird has visited the mother bird at the nest. The young bird has clung to the outside of the nest in the feeding position and rubbed beaks with the sitting bird inside. At the time of the second visit, the visitor went through the head-bobbing motions of an adult feeding a chick and then rubbed beaks with the sitting bird. The visitor was almost fully grown but its head was noticeably smaller than that of the sitting bird. Could all this be a display of affection between the mother bird and the daughter bird of the first hatching?

ooOoo

Miriwinni June 10-12th

S. J. Kimmins

A weekend camp on Andrew Krumins property near Miriwinni on the weekend of June 10-12 attracted 19 people, some of whom came only for one night or one day.

Walks were enjoyed up and down the beautiful rushing mountain streams. On the banks of Pugh's Creek, a syzigium was seen with its lower trunk smothered with bunches of white calliandra-like blooms. Treeferns and *Bowenia spectabilis* were plentiful. Back-scratcher gingers were bearing their bright red spiky flowers.

An *Angiopteris evecta* king fern spread its huge fronds over the other creek, which also boasted *Orania* palms on its banks. A large black snake made itself available to photographers and a gecko with white stripes around its tail was captured then released after inspection. A small scorpion was also found.

Some of the birds identified were fig parrots, chowchilla, sooty owl, red-necked rail and scrub fowl.

On the way home a visit was made to Eubanangee Swamp.

ooOoo

Stephen Ernest Stephens.

Marion Cassells

I would like to pay my last respects to Ernie Stephens, our late Patron. Ernie was associated with the Naturalists Club for over 50 years. I believe he was one of the co-founders with Hugo Flecker and George Brooks. I also believe he held office for some years.

He was always willing to come along and give talks to the Club when asked though he did not attend the meetings of late. He was always ready to help us with problems such as identifying the finger cherry and telling us where to find them when they were needed for the Defence Standards Laboratories. Many other times we consulted with him and he was always there to help. He was a gentleman in the right sense of the word. Gentle, quiet, courteous, helpful always smiling and ready for a quiet joke, frankly, I loved him.

Thank you Ernie for your help over the years. May you rest in peace with the Lord you loved so well.

ooOoo

Laughing Gull

L. Francis

Since December 1987 a Laughing Gull whose usual locality is the east and west coasts (mainly east as far south as Mexico) of North America, has been in residence on the Cairns mud flats. The bird may have been in Cairns for some time but was first noticed when its breeding plumage distinguished it from the Silver Gulls of the area that it otherwise looks like during other seasons. Gulls do seem to be over-looked by many bird watchers and pass unnoticed at times.

A second Laughing Gull has now been sited and appears to have arrived during April 1989. It has not yet come into breeding plumage and would seem to be an immature individual. The sex of the two birds has not been determined as male and female have the same plumage cycles throughout the year. Both birds mix quite happily with the flock of about 100 Silver Gulls that inhabit the Cairns

Esplanade and have continually inhabited the Cairns district since their arrival. They are most easily seen in the area between the Base Hospital and the Marlin Wharf when the tide is going out. This area exposes about 10 hectares of mud flats that are frequented by many species of shore birds.

This is the first confirmed sighting of the Laughing Gull for Australia and as their method of arrival is unknown, observers are waiting to see if they are capable of becoming a breeding pair.

ooOoo

#### THE WINGED HORDES

The winged hordes sweep overhead at dusk,  
Silhouetted against massing cumulus cloud.

Ivory-white, then apricot and pink  
Of palest hue, while scowling drifts of grey  
Rise up around the mountain's far-off crest.

The winged hordes, to northward seem to be  
A cloud of menacing mosquitoes bent  
On coming to devour an off-guard town;  
A silent, grim invasion, enemies  
From an insect world that tries to rule the Earth.

But now I see the wings that madly beat  
The heavy, humid air are leather-like,  
They strain to hold aloft, an animal  
With possum-ears and fur and big brown eyes.  
Yes, fruit bats in their thousands, nightly fly  
In desperate search for food across the town.

Suburban mango trees sustain a few.  
In orchards, farmers chase the hungry hordes.  
So may the native trees bear well and long,  
Lest fruit bat hordes become a hungry throng!

Sybil J. Kimmins

ooOoo

Granite Creek Gorge July 9th

S. J. Kimmins

Granite Creek Gorge is located near Mareeba and on the day of the outing the weather was fine and warm. A great bowerbird's bower was inspected and the bird seen in a nearby tree. In the gorge, 5 rock wallabies were seen, one calmly sunning itself on a huge boulder. on a grassy ridge, white everlasting daisies *Helichrysum* sp. were in bloom. More spectacular were the large groves of *Grevillea pteridifolia* with their feathery, blue-green foliage and golden flowers. Other grevilleas noticed were *G. glauca* and *G. parallela*. Of melaleuca, some *M. nervosa* and *M. veridifolia* were in bloom. Tiny carnivorous drosera plants were growing by the roadside. Burdekin

plums were in full fruit with the edible tangy black plums scattered on the ground. A road-side victim was collected on the way and identified as *Dasyurus hallucatus* northern quoll or native cat. This is the second time a club outing to this location has collected a quoll.

Nardello's Lagoon was visited and many waterbirds seen. Pigmygeese and egrets were plentiful and black swans took the eye. A sea eagle was seen tending its nest in a tall dead tree as a lotus bird scurried about below.

37 species of birds were seen on the day, 17 of them being at the lagoon.

ooOoo

Kuranda August 6th.

S. J. Kimmins

A party of 28 people visited Wrights Lockout near Kuranda. A male red-back wren brightened the panorama at the look-out as the mists rose and a muted roar of waterfalls rose from the gorge.

Members walked along the old forestry road through the rainforest to Surprise Creek. Before reaching the creek, the rainforest tapered out to a form of semi-open forest composed mainly of very fine leaved verdure featuring black cypress pine, leptospernum, callistemon and acacia, also *Eu. torellina* and stringybark. An unusual feature of this area was the pale green moss covering the forest floor.

A dewdrop spider *Argyrodes antipodianus* was found sheltering under a leaf.

A short walk was taken off the Baron Falls Road to see two huge penda trees *Zanthestemon* sp. On a walk into open forest, a northern fantail performed aerial acrobatics to the delight of its visitors.

Thanks to the hospitality of Mr and Mrs Ray Crooke for making their garden available, lunch was enjoyed on the lawn overlooking Jumrum Creek. After lunch, the Jumrum Creek Environmental Park was visited and a colony of Spectacled fruit bats were clearly seen in the trees. A Victoria riflebird and a spotted catbird were glimpsed, making a total of 29 bird species for the day.

ooOoo

INTERNATIONAL BAT CONFERENCE EXCURSION TO CAIRNS

L. Francis

The 8th International Bat Research Conference held in Sydney 9-15 July was followed by an excursion among others to Cairns which brought a party of about 45 scientists to Cairns to study bats in the area. Several projects were conducted in the two weeks period of their stay. The major project was conducted in the Cairns Botanical Gardens where a radio tracking project involving 5 *Nyctimene robinsoni* (Queensland tube-nosed bats) was conducted. The bats had small radio transmitters placed on them and their travels and roosting locations were tracked 24 hours a day for 7 days. The study revealed that the bats at this time of the year travel throughout the botanical gardens, Centenary Lakes and parts of Mount Whitfield

The second project was conducted at the Cairns sugar terminal where a colony of *Taphozous geogianus* (common sheath-tail bat) exists. Twelve individuals were caught and measurements made of

length, weight, wing shape and skull size. A blood sample was then taken followed by the injecting of a fixed quantity of water with radio isotope traces in it. The bats were captured again 3 days later and all this done again except for the injection. The aim of the project was to find the metabolic rate of the animals by observing the rate that they used water and variations in weight.

A netting programme was set up in the Cairns Botanical Gardens near the beginning of the Blue Arrow path to see what species flew along the stream paths. *Chaerephon jobensis* (northern mastiff bat) and *Taphozous georgianus* (common sheath-tailed bat) were caught and measured on several occasions. Netting was also set up at the airport mangrove board walk (over 100 meters of mist nets) with little success, several bats were sighted under lights and tracked on listening devices but few were captured as the visit coincided with winter and reduced activity of the local bats.

A visit was made to Chillagoe caves area and the *Pteropus* (fruit bat) colony at the Walk Unders visited as well as several caves. Species noted included: *Hipposideros diadema* (diadema horseshoe bat), *Rhinolophus megaphyllus* (eastern horseshoe bat), *R. philippinensis* (large eared horseshoe bat), *Tadarida jobensis* (northern freetail bat).

A visit was also made to the vicinity of the old hydro-electric station at Kuranda where a large colony of *Rhinolophus megaphyllus* (eastern horseshoe bat) has been living for many years, both greyish and orange forms were observed. Also inhabiting this location are *Miniopterus schreibersii* (common bent-wing bat), and *M. australis* (little bent wing bat).

Several houses in Cairns were visited where bats are known to roost but the typical mild and dry winter conditions and low insect numbers at this time of the year probably caused a reduction in activity by bats and no bats were sighted. *M. loriae* (little northern mastiff bat) is the most common bat found in houses in Cairns.

Bat parasites were also collected from bats that were captured and several species of flies observed mostly of *Streblidae*, a small family of blood-sucking ectoparasites. To the casual observer these have a spider-like appearance as they run through the fur of the bat. Most of the parasites were found on *R. megaphyllus* with 3 to 15 flies on each bat.

A planned trip to the lava tubes near Mt. Surprise was cancelled due to transport difficulties.

Some of the expeditioners were specializing in bat calls and the following calls were determined:

species	Frequency	period	species	frequency	period
	kHz	ms		kHz	ms
<i>Taphozous georgianus</i>	18-20	6	<i>Chaerephon jobensis</i>	33	8
<i>Mormopterus beccarii</i>	39	8	<i>M. woriae</i>	46	8
<i>Rhinolophus megaphyllus</i>	68	16	<i>R. philippinensis</i>	33	22
<i>Hipposideros ater</i>	160	6	<i>H. diadems</i>	58	6

ooOoo

570.5

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